0032

Incoming C/007/0005

Canyon Fuel Company, LLC.
Skyline Mine
A Subsidiary of Arch Western Bituminous Group, LLC.

Gregg Galecki, Environ. Coordinator
HCR 35, Box 380
Helper, UT 84526
(435) 448-2636 - Office
(435) 448-2632 - Fax

cc: Dana D.

April 20, 2006

RECEIVED
APR 21 2006
DIV. OF OIL, GAS & MINING

Ms. Pam Grubaugh-Littig
Permit Supervisor
Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Salt Lake City, Utah 84114-5801

RE: Modification to Water Monitoring Table 2.3.7-1, Canyon Fuel Company, LLC, Skyline Mine, C/007/005,

Dear Ms. Grubaugh-Littig:

Please find enclosed with this letter modifications to the Skyline Mine Water Monitoring Program that include changes to both text and Tables 2.3.7-1 through 2.3.7-3 that was most recently reviewed by Ms Dana Dean with an April 12, 2006 submittal. The focus of the submittal is to ensure the Water Monitoring tables are consistent with commitments in the M&RP, analysis reduction modification submitted in 2005, and historical monitoring prior to the Water Monitoring table format change in 2004. I feel confident the current modifications are consistent with water monitoring that has historically been conducted, and that the table is consistent with commitments made in the text in the M&RP. Albeit the tables are correct, the format is hard to follow partially due to the cumbersome and complex nature of the current sampling regime. An additional permit modification to the water monitoring program and tables will be made in the very near future that will simplify the necessary monitoring requirements and reformat the tables to be more 'user-friendly'.

Explanations of the current modifications are as follows:

- A general statement on page 2-34 clarifies a distinction between water quality and field measurements.
- Well 79-10-1A has been added to the list of non-functioning wells since it has not been functional since 2002 and had been previously removed from the monitoring program.
- The commitment to provide an annual water quality summary in the annual report has been eliminated since this is an archaic holdover from requirements preceding the inception of the Division's electronic database.
- Sample site SRD-1 was added to the text
- Both the text and monitoring table were modified to indicate Spring S24-1 will be sampled for tritium and field parameters. The Division and Skyline Mine originally agreed to monitor the flow and age of Starpoint Sandstone groundwater as it daylights in Huntington Creek at this point to help confirm the numeric model. The site is approximately 3 miles outside the permit area, the nearest mining activity is approximately eight miles away and down gradient, indicating there is no reason for laboratory analysis to be conducted.
- Dissolved Oxygen (water quality number 9) was added to CS-6 and redefined on Table 2.3.7-2A to be consistent with the intent of sampling that parameter on sites where mining could have an impact (on active-running streams below the mine's disturbed area). This is

supported by a version of Table 2.3.7-2 that was superceded by the current table format. Collection of dissolved oxygen concentrations is not necessarily pertinent to groundwater springs if the sample is collected immediately as it daylights, or to streams where mining does not have a direct impact.

- Monitoring of F-9 was clarified in Table 2.3.7-1 to indicate field parameters are collected once during three (3) seasons, and flow is monitored monthly when accessible. Monthly flow measurements were part of the Burnout Study and is further described on page 2-42b.
- The elimination of analyzing for dissolved iron and dissolved manganese from Table 2.3.7-2 is warranted from a number of aspects: 1) it is collected annually during the low flow – Summer period; 2) the total values are typically very low (<0.5 mg/l) to non-detect on most sites indicating the dissolved values would very low; 3) previous versions of Table 2.3.7-2 that were superceded with the current table indicated only Total values were collected, and 4) this is consistent with historic monitoring.

This submittal includes completed C1 and C2 forms and both one (1) redline/strikethrough and eight (8) clean copies of modified text.

If you have any questions, please call me at (435) 448-2636.

Sincerely,

Gregg A. Galecki

Gregg A. Galecki
Environmental Coordinator, Skyline Mine
Canyon Fuel Company, LLC

enclosures

APPLICATION FOR COAL PERMIT PROCESSING

Permit Change ☒ New Permit ☐ Renewal ☐ Exploration ☐ Bond Release ☐ Transfer ☐

Permittee: Canyon Fuel Company, LLC
Mine: Skyline Mine **Permit Number:** C/007/005
Title: Water Monitoring Table Clarification
Description, Include reason for application and timing required to implement:
Modification to the M&RP Water Monitoring Table - Section 2.3

Instructions: If you answer yes to any of the first eight (gray) questions, this application may require Public Notice publication.

☐ Yes ☒ No 1. Change in the size of the Permit Area? Acres: _____ Disturbed Area: _____ ☐ increase ☐ decrease.
☐ Yes ☒ No 2. Is the application submitted as a result of a Division Order? DO# _____
☐ Yes ☒ No 3. Does the application include operations outside a previously identified Cumulative Hydrologic Impact Area?
☐ Yes ☒ No 4. Does the application include operations in hydrologic basins other than as currently approved?
☐ Yes ☒ No 5. Does the application result from cancellation, reduction or increase of insurance or reclamation bond?
☐ Yes ☒ No 6. Does the application require or include public notice publication?
☐ Yes ☒ No 7. Does the application require or include ownership, control, right-of-entry, or compliance information?
☐ Yes ☒ No 8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling?
☐ Yes ☒ No 9. Is the application submitted as a result of a Violation? NOV # _____
☐ Yes ☒ No 10. Is the application submitted as a result of other laws or regulations or policies?
Explain: _____
☐ Yes ☒ No 11. Does the application affect the surface landowner or change the post mining land use?
☐ Yes ☒ No 12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2)
☐ Yes ☒ No 13. Does the application require or include collection and reporting of any baseline information?
☐ Yes ☒ No 14. Could the application have any effect on wildlife or vegetation outside the current disturbed area?
☐ Yes ☒ No 15. Does the application require or include soil removal, storage or placement?
☐ Yes ☒ No 16. Does the application require or include vegetation monitoring, removal or revegetation activities?
☐ Yes ☒ No 17. Does the application require or include construction, modification, or removal of surface facilities?
☒ Yes ☐ No 18. Does the application require or include water monitoring, sediment or drainage control measures?
☐ Yes ☒ No 19. Does the application require or include certified designs, maps or calculation?
☐ Yes ☒ No 20. Does the application require or include subsidence control or monitoring?
☐ Yes ☒ No 21. Have reclamation costs for bonding been provided?
☐ Yes ☒ No 22. Does the application involve a perennial stream, a stream buffer zone or discharges to a stream?
☐ Yes ☒ No 23. Does the application affect permits issued by other agencies or permits issued to other entities?

Please attach four (4) review copies of the application. If the mine is on or adjacent to Forest Service land please submit five (5) copies, thank you. (These numbers include a copy for the Price Field Office)

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments, undertakings, and obligations, herein.

Wesley K Sorensen — Print Name
Wesley K Sorensen 4/19/06 — Sign Name, Position, Date
General Manager

Subscribed and sworn to before me this 19th day of April, 2006

Notary Public

My commission Expires: 12/2, 2007
Attest: State of Utah } ss:
County of Carbon

For Office Use Only:	Assigned Tracking Number:	Received by Oil, Gas & Mining
		RECEIVED APR 21 2006 DIV. OF OIL, GAS & MINING

APPLICATION FOR COAL PERMIT PROCESSING
Detailed Schedule Of Changes to the Mining And Reclamation Plan

Permittee: Canyon Fuel Company, LLC
Mine: Skyline Mine **Permit Number:** C/007/005
Title: Modification to the M&RP Water Monitoring Table - Section 2.3

Provide a detailed listing of all changes to the Mining and Reclamation Plan, which is required as a result of this proposed permit application. Individually list all maps and drawings that are added, replaced, or removed from the plan. Include changes to the table of contents, section of the plan, or other information as needed to specifically locate, identify and revise the existing Mining and Reclamation Plan. Include page, section and drawing number as part of the description.

			DESCRIPTION OF MAP, TEXT, OR MATERIAL TO BE CHANGED
☐ Add	☒ Replace	☐ Remove	Replace pages 2-34, 2-35, 2-35a, 2-35c, 2-36, 2-36a, 2-37, 2-37a, and 2-38 in Section 2.3
☐ Add	☐ Replace	☐ Remove	
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Any other specific or special instruction required for insertion of this proposal into the Mining and Reclamation Plan.

eight (8) redline/strikethrough and eight (8) clean copies submitted

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Late fall samples are obtained in October through November. These time periods were selected because the sites are usually inaccessible until late June and after November due to snow depth and frozen water courses. Several sites on Eccles Creek are monitored in December through February since they are adjacent to a maintained road and the water discharged from the mine normally keeps the stream from freezing over.

A combination of ~~W~~water quality samples and field measurements are collected from the 25 selected springs in the project area. The samples are comprehensively analyzed each year for the parameters listed in Table 2.3.7-1 and Table 2.3.7-2. All water samples collected for use in this permit have been collected and analyzed according to methods in either the "Standard Methods for the Examination of Water and Wastewater" or the 40 CFR parts 136 and 434. A listing identifying the station types is shown on Table 2.3.7-3.

In addition to the collection of the outlined water quality data, water level data has been collected from each of the wells (if functional) as scheduled on Tables 2.3.7-1, 2.3.7-2, 2.3.7-2A and 2.3.7-3, and noted on Plate 2.3.6-1. Water quality samples will be collected from the Waste Rock Disposal Site Well 92-91-03 in accordance with the schedule and parameter list shown on Table 2.3.7-5. Summary information on these observation wells is found on Table 2.3.7-4. ~~Three~~ Four wells, 79-10-1A, 79-14-2B, ~~and~~ 79-22-2-1, and 79-22-2-2 have experienced casing failures, and are currently nonfunctional. There are no plans to replace these wells.

The amount of water discharged from each mine on each monitoring occasion will also be monitored at the mine mouth through the use of a totalizing flow meter or similar device. Significant changes in the source of water in the mine will be noted during the period of operation. Underground water pumped from each mine will be monitored for water quality. Mine #1 discharge is sampled at Station CS-14. Mine #3 discharge is sampled at Station CS-12.Mine #2 water is discharged at JC-3.

Should the concentrations result in a discharge which exceeds the UPDES discharge permit limitations or indicates potential disturbance to the hydrologic balance, an attempt will be made to isolate the contributing source and an evaluation made of possible appropriate remedial action. The best alternative remedial action will be implemented as soon as practicable to ensure protection of Eccles Creek water quality. Copies of the current UPDES permit (expires September 30, 2004) is appended to this section as Exhibit 2.3-1.

As required, ground water quality data collected from the property area will be submitted to the Utah Division of Oil, Gas, and Mining. Such reports will be submitted electronically within 90 days after completion of the quarterly monitoring program. ~~An annual report which will include a summary of water quality data and water well level data for the previous year will be submitted within 90 days of the end of each year.~~

In 2002, several new sites were added to the monitoring program. Sites MC-1, MC-2, MC-3, MC-4, MC-5, and MC-6 are surface water sites on Mud Creek (Site MC-6 was added in November 2002 as agreed upon by the operator and the Division). These sites were identified as part of a study to determine the impacts of increase mine discharge on Mud and Eccles Creeks. EarthFax Engineering, Inc. was contracted to write and implement a work plan to evacuate the impacts in July 2002. A copy of the work plan is included in Volume 4 of this M&RP. The study calls for establishing and characterizing reference sites on Eccles and Mud Creeks to: 1) determine depth to ground water at the sites, 2) obtain historic flow data for the stream for comparative purposes, 3) gather and evacuate historic aerial photos of the streams, 4) collect additional water quality data, 5) evaluate bank stability indexes along with vegetation information, and conduct long-term monitoring at the selected sites. The initial field work for this project was

completed in August 2002 but the interim report is not yet available. Skyline will submit this first and subsequent first progress reports for this project with its annual reports.

Samples obtained at the MC-sites will be monitored for total flow, TDS, TSS, and total phosphorous. In addition a stream stability cross-section and reach survey will be conducted approximately 75 yards downstream of the MC-6 monitoring location. The results of these analyses will be reported with the other mine water quality monitoring reports.

Sites MD-1, JC-1, JC-3, SRD-1, and ELD-1 were also added to the monitoring site list. MD-1 and SRD-1 ~~is~~ are ~~a~~ composite samples of all the discharge from Skyline Mine to Eccles Creek. JC-1 and JC-3 are samples of the water discharged from the two James Canyon ground and mine dewatering wells. ELD-1 is the total flow from both JC-1 and JC-3. MD-1, SRD-1 and ELD-1 are monitored for total flow and the results are reported to the Division on a monthly basis. Quarterly, MD-1, JC-1, and JC-3 are also monitored for TSS, TDS, and total phosphorous. Since JC-3 is a PacifiCorp UPDES site, it is monitored each month for flow, TSS, TDS, oil and grease, and total iron. The UPDES sampling results are forwarded to the Division monthly.

Spring monitoring sites WQ1-39, WQ3-6, WQ3-26, WQ3-41, WQ3-43, and WQ4-12 were added to the permit. Surface water sites CS-19, CS-20, and CS-21 were added as were wells 91-26-1 and 91-35-1. All of these sites are in the North Lease area. Location of these samples sites are illustrated on Drawing 2.3.6-1.

Skyline Mine has also obtained numerous water samples from within the mine for age-dating purposes. Samples have been analyzed for both stable and unstable isotopes; the majority being analyzed for tritium and carbon 14 content. The analyses results of these samples is discussed in detail in the July 2002 Addendum to the PHC. The results of repeated tritium sampling and analysis in a few location in the mine, specifically those in the 9 and 10 Left panel areas that began in August 2001, suggest that the majority of the water is not younger than 50 years. Only a few carbon 14 samples have been obtained from these

should be accessible for the next several years. The results of the analyses will be monitored for changes in ages that may indicate changes in the source of the mine water inflows. These samples will be obtained as outlined in Table 2.3.7-1.

Samples of water discharging from springs 8-253 (Flat Canyon area), 2-413 (James Canyon), S24-1 (Sulfur Spring in Huntington Canyon), and S15-3 (Upper Huntington Creek) will be collected during the high spring (April - June) and late fall (October - November) monitoring period and analyzed for tritium content only - no other laboratory analysis is conducted at these sites. Additional tritium samples will be obtained from EL-1 (inflow to Electric Lake above JC-1 and JC-3 discharge) and EL-2 (outflow from Electric Lake) during the high spring, low summer (August - September), and late fall monitoring periods. These samples will be collected for a period of three years beginning in the spring of 2004. The purpose of collecting these tritium samples, along with the tritium samples from JC-1, is to monitor the change in tritium content, if any, in the local aquifers and Electric Lake during spring, summer, and fall and over the three year period.

Table 2.3.7-1
Comprehensive Water Quality Analytical Schedule
(Surface and Ground Water Stations)

Streams	Protocol	Comments
CS-1	A 12	
CS-3	A 1, 2, 6, 7	
CS-4	A 1, 2, 6, 7	
CS-6	A, W, 1, 2, 3, 6, 7,9	
CS-7 (F-5)	A 12	
CS-8	A 12	
CS-9	A 1, 2, 6,7	
CS-10	A 12	
CS-11	A 1, 2, 6, 7	
CS-12	A, W, 1, 2, 3, 6, 7	
CS-13	A, W, 1, 2, 3, 6,7	
CS-14	A, W, 1, 2, 3, 6,7	
CS-15	A 10	
CS-16	A 12	
CS-17	A 12	
CS-18	A 12	
CS-19	A 1, 2	
CS-20	A 1, 2	
CS-21	A 1, 2	
CS-22	D 10	
CS-23	D 10	
MD-1	A, W, 4	(Mine discharge - CS-12 and CS-14 combined)
MD-1	B 10	
SRD-1	B 10	(Same as MD-1)
F-9	~~C 12~~ A 12 and C	
F-10	A 1, 2 and C	
UP&L-10	A 1, 2	
VC-6	A, W, 1, 2, 3, 6,7,9	
VC-9	A, W, 1, 2, 3, 6,7,8,9	Flow is sum of CS-6 and CS13
VC10	A, W, 12	
VC11	D 10	
VC12	D 10	
MC-1	A, W, 4	
MC-2	A, W, 4	
MC-3	A, W, 4	
MC-4	A, W, 4	
MC-5	A, W, 4	
MC-6	A, W, 4	
NL-1 through NL-42	F 10	North Lease Subsidence Points
WRDS #1	A 1, 2, 6, 7	
WRDS #2	A 1, 2, 6, 7	
WRDS #3	A 1, 2, 6, 7	
WRDS #4	A 1, 2, 6, 7	
EL-1	A 13	Sample spring, summer, and fall for 3 years beginning in 2004
EL-2	A 13	

Table 2.3.7-1 (cont.)
Comprehensive Water Quality Analytical Schedule
(Surface and Ground Water Stations)

Springs	Protocol	Comments
S10-1	A 1, 2	
S12-1	A 1, 2	
S13-2	A 12	
S13-7	A 1, 2	
S14-4	A 12	
S15-3	A 12	
S15-3	G 13 (13 - spring and fall for 3 years starting in 2004)	
S17-2	A 1, 2	
S22-5	A 12	
S22-11	A 12	
S23-4	A 12	
S24-1 Sulfur Spring	A ~~1, 2,~~ 12	
S24-1 Sulfur Spring	G 13 (13 - spring and fall for 3 years starting in 2004)	
S24-12	A 12	
S26-13	A 12	
S34-12	A 12	
S35-8	A 12	
S36-12	A 12	
2-413	A 12	
2-413	G 13 (13 - spring and fall for 3 years starting in 2004)	
3-290	A 12	
8-253	G 13	Sampled spring and fall for 3 years starting in 2004
WQ1-39	A 1, 2	
WQ3-6	A 1, 2	
WQ3-26	A 1, 2	
WQ3-41	A 1, 2	
WQ3-43	A 1, 2	
WQ4-12	A 1, 2	
Wells		
JC-1	B 10, H 5	
JC-3	B 10, H 4	
ELD-1	B 10	(JC-1 and JC-3 combined)
W79-10-1B	E 11	
W79-14-2A	E 11	
W79-26-1	E 11	
W79-35-1A	E 11	
W79-35-1B	E 11	
W2-1 (98-2-1)	E 11	
W20-4-1	E 11	
W20-4-2	E 11	
W99-4-1	E 11	
W99-21-1	E 11	
W99-28-1	E 11	
W20-28-1	E 11	
91-26-1	E 11	
91-35-1	E 11	

Table 2.3.7-2
Water Quality Analytical Schedule
Streams and Springs
High Spring (April - June),
Late Fall (October - November), and
Winter (December - February) Flows

Field Measurements
Flow
pH
Specific Conductance
Temperature, Air
Temperature, Water

Laboratory Measurements
Ammonia
Bicarbonate
Calcium, dissolved
Chloride
Iron, Total ~~and dissolved~~
Magnesium, dissolved
Manganese, total ~~and dissolved~~
Nitrate
Phosphate (Orthophosphate)
Potassium, dissolved
Sodium, dissolved
Sulfate
Suspended Solids
Total Dissolved Solids

Table 2.3.7-2A
Water Quality Analytical Schedule
Streams and Springs
-Low Summer Flow-
(August - September)

Field Measurements
Flow
Dissolved Oxygen (On Eccles Creek below Mine only - CS-6, VC-6, VC-9)
pH
Specific Conductance
Temperature, Air
Temperature, Water

Laboratory Measurements
Acidity
Alkalinity
Bicarbonate
Ammonia
Barium, Total and dissolved
Boron Total and dissolved
Calcium, dissolved
Chloride
Copper, total and dissolved
Fluoride
Iron, total and dissolved
Lead, total and dissolved
Magnesium, dissolved
Manganese, total and dissolved
Nitrate
Phosphate (Orthophosphate)
Potassium, dissolved
Sodium, dissolved
Sulfate
Suspended Solids
Total Dissolved Solids

TABLE 2.3.7-3
MONITORING STATION IDENTIFICATION

ECCLES CANYON/MUD CREEK DRAINAGES

STREAM STATIONS - 22 Stations

CS-1	CS-3	CS-4	CS-6	CS-9	CS-11	CS-15
VC-6	VC-9	VC-10	MC-1	MC-2	MC-3	MC-4
MC-5	MC-6	CS-19	CS-20	CS-21	VC-11	VC-12

MINE DISCHARGE STATIONS - 4 Stations

CS-12 (Mine #3) CS-14 (Mine #1) MD-1 (Composite CS-12 & CS-14)
SRD-1 (Total Mine Site Discharge to Eccles Creek/Scofield Reservoir)*

FRENCH DRAIN STATIONS - 1 Station

CS-13

HUNTINGTON CANYON

STREAM STATIONS - 12 Stations

CS-7 (F-5)	CS-8	CS-1	CS-16	CS-17	CS-18	CS-22
CS-23	UPL-3*	UPL-10	F-9	F-10	EL-1	EL-2

*Discontinued Spring, 1989

WASTEROCK DISPOSAL SITE

STREAM STATIONS - 4 Stations

WRDS #1 WRDS #2 WRDS #3 WRDS #4

GROUNDWATER STATIONS

SPRINGS - 25 Stations

S10-1	S12-1	S13-2	S13-7	S14-4	S15-3	S17-2
S22-5	S22-11	S23-4	S24-1 Sulfur	S24-12	S26-13	S34-12
S35-8	S36-12	2-413	3-290	WQ1-39	WQ3-6	WQ3-26
WQ3-41	WQ3-43	WQ4-12	8-253			

WELLS (MONITORING) - ~~19~~ 18 Well Stations

~~W79-10-1A~~	W79-10-1B	W79-14-2A	W79-26-1	W79-35-1A
W79-35-1B	92-91-03	W2-1(98-2-1)	W20-4-1	W20-4-2
W99-4-1	W99-21-1	W99-28-1	W20- 28-1	JC-1
JC-3	ELD-1 (Total of JC-1 and JC-3)*	91-26-1	91-35-1	

WELLS, CULINARY -Referenced but not monitored

W13-1 W13-2 W17-1 W17-3 W24-1

NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)

001 Portal Area 002 Loadout Area 003 Waste Rock Area JC-3 James Canyon

* Sites are monitored for total flow only and the results are reported to the Division on a monthly basis.

Revised 04/19/06

Late fall samples are obtained in October through November. These time periods were selected because the sites are usually inaccessible until late June and after November due to snow depth and frozen water courses. Several sites on Eccles Creek are monitored in December through February since they are adjacent to a maintained road and the water discharged from the mine normally keeps the stream from freezing over.

A combination of water quality samples and field measurements are collected from the 25 selected springs in the project area. The samples are comprehensively analyzed each year for the parameters listed in Table 2.3.7-1 and Table 2.3.7-2. All water samples collected for use in this permit have been collected and analyzed according to methods in either the "Standard Methods for the Examination of Water and Wastewater" or the 40 CFR parts 136 and 434. A listing identifying the station types is shown on Table 2.3.7-3.

In addition to the collection of the outlined water quality data, water level data has been collected from each of the wells (if functional) as scheduled on Tables 2.3.7-1, 2.3.7-2, 2.3.7-2A and 2.3.7-3, and noted on Plate 2.3.6-1. Water quality samples will be collected from the Waste Rock Disposal Site Well 92-91-03 in accordance with the schedule and parameter list shown on Table 2.3.7-5. Summary information on these observation wells is found on Table 2.3.7-4. Four wells, 79-10-1A, 79-14-2B, 79-22-2-1, and 79-22-2-2 have experienced casing failures, and are currently nonfunctional. There are no plans to replace these wells.

The amount of water discharged from each mine on each monitoring occasion will also be monitored at the mine mouth through the use of a totalizing flow meter or similar device. Significant changes in the source of water in the mine will be noted during the period of operation. Underground water pumped from each mine will be monitored for water quality. Mine #1 discharge is sampled at Station CS-14. Mine #3 discharge is sampled at Station CS-12.Mine #2 water is discharged at JC-3.

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completed in August 2002 but the interim report is not yet available. Skyline will submit this first and subsequent first progress reports for this project with its annual reports.

Samples obtained at the MC-sites will be monitored for total flow, TDS, TSS, and total phosphorous. In addition a stream stability cross-section and reach survey will be conducted approximately 75 yards downstream of the MC-6 monitoring location. The results of these analyses will be reported with the other mine water quality monitoring reports.

Sites MD-1, JC-1, JC-3, SRD-1, and ELD-1 were also added to the monitoring site list. MD-1 and SRD-1 are composite samples of all the discharge from Skyline Mine to Eccles Creek. JC-1 and JC-3 are samples of the water discharged from the two James Canyon ground and mine dewatering wells. ELD-1 is the total flow from both JC-1 and JC-3. MD-1, SRD-1 and ELD-1 are monitored for total flow and the results are reported to the Division on a monthly basis Quarterly, MD-1, JC-1, and JC-3 are also monitored for TSS, TDS, and total phosphorous. Since JC-3 is a PacifiCorp UPDES site, it is monitored each month for flow, TSS, TDS, oil and grease, and total iron. The UPDES sampling results are forwarded to the Division monthly.

Spring monitoring sites WQ1-39, WQ3-6, WQ3-26, WQ3-41 WQ3-43, and WQ4-12 were added to the permit. Surface water sites CS-19, CS-20, and CS-21 were added as were wells 91-26-1 and 91-35-1. All of these sites are in the North Lease area. Location of these samples sites are illustrated on Drawing 2.3.6-1.

Skyline Mine has also obtained numerous water samples from within the mine for age-dating purposes. Samples have been analyzed for both stable and unstable isotopes; the majority being analyzed for tritium and carbon 14 content. The analyses results of these samples is discussed in detail in the July 2002 Addendum to the PHC. The results of repeated tritium sampling and analysis in a few location in the mine, specifically those in the 9 and 10 Left panel areas that began in August 2001, suggest that the majority of the water is not younger than 50 years. Only a few carbon 14 samples have been obtained from these

should be accessible for the next several years. The results of the analyses will be monitored for changes in ages that may indicate changes in the source of the mine water inflows. These samples will be obtained as outlined in Table 2.3.7-1.

Samples of water discharging from springs 8-253 (Flat Canyon area), 2-413 (James Canyon), S24-1 (Sulfur Spring in Huntington Canyon), and S15-3 (Upper Huntington Creek) will be collected during the high spring (April - June) and late fall (October - November) monitoring period and analyzed for tritium content only - no other laboratory analysis is conducted at these sites. Additional tritium samples will be obtained from EL-1 (inflow to Electric Lake above JC-1 and JC-3 discharge) and EL-2 (outflow from Electric Lake) during the high spring, low summer (August - September), and late fall monitoring periods. These samples will be collected for a period of three years beginning in the spring of 2004. The purpose of collecting these tritium samples, along with the tritium samples from JC-1, is to monitor the change in tritium content, if any, in the local aquifers and Electric Lake during spring, summer, and fall and over the three year period.

Table 2.3.7-1
Comprehensive Water Quality Analytical Schedule
(Surface and Ground Water Stations)

Streams	Protocol	Comments
CS-1	A 12	
CS-3	A 1, 2, 6, 7	
CS-4	A 1, 2, 6, 7	
CS-6	A, W, 1, 2, 3, 6, 7,9	
CS-7 (F-5)	A 12	
CS-8	A 12	
CS-9	A 1, 2, 6,7	
CS-10	A 12	
CS-11	A 1, 2, 6, 7	
CS-12	A, W, 1, 2, 3, 6, 7	
CS-13	A, W, 1, 2, 3, 6,7	
CS-14	A, W, 1, 2, 3, 6,7	
CS-15	A 10	
CS-16	A 12	
CS-17	A 12	
CS-18	A 12	
CS-19	A 1, 2	
CS-20	A 1, 2	
CS-21	A 1, 2	
CS-22	D 10	
CS-23	D 10	
MD-1	A, W, 4	(Mine discharge - CS-12 and CS-14 combined)
MD-1	B 10	
SRD-1	B 10	(Same as MD-1)
F-9	A 12 and C	
F-10	A 1, 2 and C	
UP&L-10	A 1, 2	
VC-6	A, W, 1, 2, 3, 6,7,9	
VC-9	A, W, 1, 2, 3, 6,7,8,9	Flow is sum of CS-6 and CS13
VC10	A, W, 12	
VC11	D 10	
VC12	D 10	
MC-1	A, W, 4	
MC-2	A, W, 4	
MC-3	A, W, 4	
MC-4	A, W, 4	
MC-5	A, W, 4	
MC-6	A, W, 4	
NL-1 through NL-42	F 10	North Lease Subsidence Points
WRDS #1	A 1, 2, 6, 7	
WRDS #2	A 1, 2, 6, 7	
WRDS #3	A 1, 2, 6, 7	
WRDS #4	A 1, 2, 6, 7	
EL-1	A 13	Sample spring, summer, and fall for
EL-2	A 13	3 years beginning in 2004

Table 2.3.7-1 (cont.)
Comprehensive Water Quality Analytical Schedule
(Surface and Ground Water Stations)

Springs	Protocol	Comments
S10-1	A 1, 2	
S12-1	A 1, 2	
S13-2	A 12	
S13-7	A 1, 2	
S14-4	A 12	
S15-3	A 12	
S15-3	G 13 (13 - spring and fall for 3 years starting in 2004)	
S17-2	A 1, 2	
S22-5	A 12	
S22-11	A 12	
S23-4	A 12	
S24-1 Sulfur Spring	A 12	
S24-1 Sulfur Spring	G 13 (13 - spring and fall for 3 years starting in 2004)	
S24-12	A 12	
S26-13	A 12	
S34-12	A 12	
S35-8	A 12	
S36-12	A 12	
2-413	A 12	
2-413	G 13 (13 - spring and fall for 3 years starting in 2004)	
3-290	A 12	
8-253	G 13	Sampled spring and fall for 3 years starting in 2004
WQ1-39	A 1, 2	
WQ3-6	A 1, 2	
WQ3-26	A 1, 2	
WQ3-41	A 1, 2	
WQ3-43	A 1, 2	
WQ4-12	A 1, 2	
Wells		
JC-1	B 10, H 5	
JC-3	B 10, H 4	
ELD-1	B 10	(JC-1 and JC-3 combined)
W79-10-1B	E 11	
W79-14-2A	E 11	
W79-26-1	E 11	
W79-35-1A	E 11	
W79-35-1B	E 11	
W2-1 (98-2-1)	E 11	
W20-4-1	E 11	
W20-4-2	E 11	
W99-4-1	E 11	
W99-21-1	E 11	
W99-28-1	E 11	
W20-28-1	E 11	
91-26-1	E 11	
91-35-1	E 11	

Table 2.3.7-2
Water Quality Analytical Schedule
Streams and Springs
High Spring (April - June),
Late Fall (October - November), and
Winter (December - February) Flows

Field Measurements
Flow
pH
Specific Conductance
Temperature, Air
Temperature, Water

Laboratory Measurements
Ammonia
Bicarbonate
Calcium, dissolved
Chloride
Iron, Total
Magnesium, dissolved
Manganese, Total
Nitrate
Phosphate (Orthophosphate)
Potassium, dissolved
Sodium, dissolved
Sulfate
Suspended Solids
Total Dissolved Solids

Table 2.3.7-2A
Water Quality Analytical Schedule
Streams and Springs
-Low Summer Flow-
(August - September)

Field Measurements
Flow
Dissolved Oxygen (On Eccles Creek below Mine only - CS-6, VC-6, VC-9)
pH
Specific Conductance
Temperature, Air
Temperature, Water

Laboratory Measurements
Acidity
Alkalinity
Bicarbonate
Ammonia
Barium, Total and dissolved
Boron Total and dissolved
Calcium, dissolved
Chloride
Copper, total and dissolved
Fluoride
Iron, total and dissolved
Lead, total and dissolved
Magnesium, dissolved
Manganese, total and dissolved
Nitrate
Phosphate (Orthophosphate)
Potassium, dissolved
Sodium, dissolved
Sulfate
Suspended Solids
Total Dissolved Solids

TABLE 2.3.7-3
MONITORING STATION IDENTIFICATION

ECCLES CANYON/MUD CREEK DRAINAGES

STREAM STATIONS - 22 Stations

CS-1	CS-3	CS-4	CS-6	CS-9	CS-11	CS-15
VC-6	VC-9	VC-10	MC-1	MC-2	MC-3	MC-4
MC-5	MC-6	CS-19	CS-20	CS-21	VC-11	VC-12

MINE DISCHARGE STATIONS - 4 Stations

CS-12 (Mine #3) CS-14 (Mine #1) MD-1 (Composite CS-12 & CS-14)
SRD-1 (Total Mine Site Discharge to Eccles Creek/Scofield Reservoir)*

FRENCH DRAIN STATIONS - 1 Station

CS-13

HUNTINGTON CANYON

STREAM STATIONS - 12 Stations

CS-7 (F-5)	CS-8	CS-1	CS-16	CS-17	CS-18	CS-22
CS-23	UPL-3*	UPL-10	F-9	F-10	EL-1	EL-2

*Discontinued Spring, 1989

WASTEROCK DISPOSAL SITE

STREAM STATIONS - 4 Stations

WRDS #1 WRDS #2 WRDS #3 WRDS #4

GROUNDWATER STATIONS

SPRINGS - 25 Stations

S10-1	S12-1	S13-2	S13-7	S14-4	S15-3	S17-2
S22-5	S22-11	S23-4	S24-1 Sulfur	S24-12	S26-13	S34-12
S35-8	S36-12	2-413	3-290	WQ1-39	WQ3-6	WQ3-26
WQ3-41	WQ3-43	WQ4-12	8-253			

WELLS (MONITORING) - 18 Well Stations

W79-10-1B	W79-14-2A	W79-26-1	W79-35-1A	W79-35-1B
92-91-03	W2-1(98-2-1)	W20-4-1	W20-4-2	W99-4-1
W99-21-1	W99-28-1	W20- 28-1	JC-1	JC-3
	ELD-1 (Total of JC-1 and JC-3)*	91-26-1	91-35-1	

WELLS, CULINARY -Referenced but not monitored

W13-1 W13-2 W17-1 W17-3 W24-1

NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)

001 Portal Area 002 Loadout Area 003 Waste Rock Area JC-3 James Canyon

* Sites are monitored for total flow only and the results are reported to the Division on a monthly basis.

Revised 04/19/06